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Math 1211: Introductory Calculus II

WINTER 2016

Description: This is a continuation of Math 1210, and is intended for science and engineering students. Core topics include: techniques of integration, applications of the definite integral (e.g. area, volume, arc length); improper integrals; parametric equations; polar coordinates; Taylor polynomials; infinite sequences and series; power series.
(3 credit hours / 3 hours lecture plus 1.5 hours recitation per week)

Webpage: `http://cs.smu.ca/math1211`

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Office hours will be announced and posted on the course webpage.

Lecture and Recitation Schedule:

Meeting Type	*Time*	*Room*	*Instructor*
Lecture	10:00–11:45 MW	LA 170	J. Irving
Recitation A	10:00–11:15 F	B 218	J. Irving
Recitation B	2:30–3:45 W	LA 273	R. Dawson
Recitation C	1:00–2:15 F	LA 271	J. Irving
Recitation D	1:00–2:15 F	LA 277	R. Dawson
Recitation E	10:00–11:15 F	LA 271	R. Moussi
Recitation F	2:30–3:45 W	LA 274	R. Moussi

Textbook: *Calculus: Early Transcendentals (2nd ed)* by Jon Rogawski

Assessment: Your final numeric grade will normally be computed as indicated below.

Weighting	*Description*	*Assessment Date*
15%	Quizzes & Worksheets	weekly recitations
30%	Midterm Test	March 3 (from 7–9pm)
55%	Final Examination	TBA (within exam period)

However, a grade of less than 30% on the midterm test or a grade of less than 40% on the final examination will result in a failing grade in the course.

Final Exam: The date of the final examination is not yet determined, but it will occur within the official examination period (April 9–22). Do not make travel plans during this period until the date of the exam has been announced. The exam will cover the entirety of the course, with somewhat greater emphasis on post-midterm material.

Midterm Test: The midterm will be held on *Thursday, March 3* from 7:00–9:00pm. It will cover all material discussed in lectures up to (and including) February 24.

Note that the midterm occurs outside of regular instructional hours. If valid reasons prohibit you from writing the test at the scheduled time then you will be offered reasonable accommodations. However, you *must* notify the instructor and provide him with proper documentation by February 17 at the latest. (See Academic Regulation 4c in the SMU 2015-2016 Academic Calendar, p.32.)

Recitations: There will be 9 recitations throughout the term, held weekly *except* during the weeks of January 6, March 2, March 23, and April 6. The nature of the recitations may vary from week to week, but you will generally be expected to complete a brief quiz (working on your own) followed by a longer worksheet (working in small groups with guidance from an instructor).

The recitation quizzes and worksheets will be submitted for grading and will comprise approximately 5% and 10%, respectively, of your course grade. Only your best 8 of 9 quiz/worksheet scores will contribute.

The content of the quizzes/worksheets will generally be based on the *previous* week's suggested homework (see below). Some recitations may introduce material not covered in lectures.

Homework: Suggested homework problems will be posted to the course webpage on a weekly basis. Your work on these problems will *not* be collected or graded, nor will you be given official solutions. Nevertheless, the homework assignments are an instrumental part of the course and should be attempted by every student. Careful attention to these exercises will be the biggest driver of your success in the course.

If you are having difficulties with the homework then you are strongly encouraged to take advantage of all available resources, such as one-on-one help during your instructor's office hours, peer tutoring at the SNAP centre, supplementary texts from the library, etc.

Absence: Except in very special cases (which must be appropriately documented), all assessments must be completed during their scheduled periods. Do not make travel or other arrangements which could potentially be in conflict. Moreover, **all** requests for special arrangements must be made **prior** to the relevant assessment. No accommodations will be granted for requests made after-the-fact.

For logistical reasons there will be no allowance to "make up" missed recitation work. If you miss 2 or more recitations for valid reasons then the weighting of your other recitation work will be increased accordingly.

Calculators: The use of calculators or other electronic aids (including phones, tablets, laptops, *etc.*) will *not* be permitted during any assessment period (midterm, exam, or recitation). Questions will be chosen so that such aids are not necessary.

This ban on electronic devices is not arbitrary, nor does it stem from a desire to relive antiquity. We are well aware of the usefulness of calculators and computers. We even use them from time to time, and indeed encourage you to bring them to lecture. However, there are sound reasons to exclude them from our tests. Ask your instructor if you desire further explanation.

Fairness: Copying work from another student is always prohibited and offenders will be subject to academic discipline. This applies to collaborative assignments as well as tests. (If you need to look at someone else's answer to write down your own, then you are very likely copying from them.)

If you are found to be in possession of prohibited aids during an assessment period (test, exam, recitation) then you will be deemed to be cheating, regardless of whether you were caught using the device.

All students should be familiar with the section of the SMU 2015-2016 Academic Calendar entitled *Academic Integrity and Student Responsibility* (pp.20–28).

Tentative Lecture Schedule:

The following is subject to variation without prior notice for reasons including, but not limited to, class cancellations.

Week	Dates	Topics	Text
1	Jan. 6	Integration by Substitution	5.6, 5.7
2	Jan. 11 Jan. 13	Integration by Parts. Trigonometric Integrals.	7.1 7.2
3	Jan. 18 Jan. 20	Trignometric Substitution. Partial Fractions.	7.3 7.5
4	Jan. 25 Jan. 27	Area Between Curves. Volumes by Cross Section	6.1 6.2
5	Feb. 1 Feb. 3	Volumes of Revolution. Work and Energy.	6.3, 6.4 6.5
6	Feb. 8 Feb. 10	Arc Length and Surface Area. Parametric Equations.	8.1 11.1
	Feb. 15–19	**Reading Week**	
7	Feb. 22 Feb. 24	Parametric Equations (continued). Polar Coordinates.	11.2 11.3
8	Feb. 29 Mar. 2 Mar. 3	Area in Polar Coordinates. Taylor Polynomials. **Midterm** (7–9pm on Thursday, Mar. 3)	11.4 8.4
9	Mar. 7 Mar. 9	Sequences and Series.	10.1, 10.2
10	Mar. 14 Mar. 16	Convergence of Series.	10.3, 10.4
11	Mar. 21 Mar. 23	The Ratio Test. Power Series.	10.5 10.6
12	Mar. 28 Mar. 30	**Easter Monday** (no lecture) Taylor Series.	10.7
13	Apr. 4 Apr. 6	Differential Equations.	9.1, 9.4